Industrial By-Products Issue Paper
2001 JTR Recycling Market Development Roundtable

Introduction

The purpose of this paper is to provide a summary of the industrial by-products discussion which took place at the Recycling Market Development Roundtable in June 2001. The discussion focused on potential solutions and collaborative efforts to address market barriers and capitalize on opportunities to expand markets for industrial by-products.

Current Situation

There are currently limited secondary markets for many high volume, industrial by-products such as sludges, ashes or other solid/semi-solid residues. Generators of these materials include, but are certainly not limited to, the coal combustion, metal casting, pulp and paper, cement, steel, mining and food processing industries. Many of the trade groups representing these industries (i.e., American Iron and Steel Institute) maintain generation, disposal and recycling numbers for the larger players in the industry (those members who are willing to report them). Additionally, some states (i.e., IN, MA) conducted surveys or market assessments of facilities. Finally, several government agencies may compile and maintain statistics on materials management for large industries (i.e., EPA's Sector Notebooks or Bureau of Mines mineral statistics).

Several state agencies, universities, trade groups and consultants have targeted large volume industrial or commercial waste streams in their waste reduction or market development initiatives. Despite these efforts, there is limited activity to promote and work with these industries to divert materials from landfills or on-site surface impoundments.

Summary of Existing Initiatives

EPA	Spearheading a multi-stakeholder process with the metal casting industry to better define the issues of concern to regulators. A "matrix" of sand types vs. acceptable uses is being developed.
Association of State and Territorial Solid Waste Management Officials (ASTSWMO)	Developed various products including a *Beneficial Use Survey Report (May 2000)* and a regulatory matrix documenting the beneficial use determination process and enforcement and compliance issues within the jurisdictions of the 42 respondents. Products are available at its Web site: http://www.astswmo.org/Publications/summaries.htm#ASTSWMO
National Council of the Paper Industry for Air and Stream Improvement (NCASI)	An organization, funded by the forest products industry, which held a meeting in Chicago in March 2001 with multiple industries (e.g., cement industry, waste brokers, Kraft, Weyerhauser) to discuss how industries and regions can work together to use industrial waste streams for beneficial purposes.
Foundry Industry Recycling Starts Today (FIRST)	An organization working to develop markets for by-products of the metal casting process, including spent foundry sands, slags, and pollution control dust.
States	Some states (e.g., Wisconsin) have their own beneficial use determination process for industrial by-products. Others make beneficial use determinations on a case-by-case basis.

Significant Barriers

Market Development/Recycling:

- High transportation costs
- Low disposal costs
- Need for success stories to promote
- Lack of a forum for dialogue among the various stakeholders
- Lack of information, including data on potential markets and case studies of successful operations
- Lack of credibility in the marketplace
- Resource constraints that prohibit the development of research studies such as GIS mapping aimed at reducing transportation costs
- Lack of awareness by those that use the end products
- Lack of specifications for material reuse and recovery
- Inadequate dialogue and information exchange among states and industry

Regulatory:

- Regulations
- Need for legislation to permit beneficial uses
- Perception - fear of chemicals and contamination by society
- Lack of actual data showing that applications are safe
- Definition of materials as waste
- Multiple agency involvement (i.e., DOT)
- Fear of liability. (In Missouri, Kansas City Power & Light provided ash cleanup when an ash monofill collapsed at a coal-fired plant. As a result, however, the company was penalized by being held liable for damages under the governing regulations.)
- Difficulty selling the concept of industrial by-product reuse and recycling to legislators
- A sense of isolation among the regulatory community; regulators don't know where to go for information
- Complex and lengthy process to receive "beneficial use" determination
- Disconnect between the State HQ environmental office and field offices regarding beneficial use of industrial by-products

Generators:

- Information– Much of the information about these by-product streams is known only to the facility generating it
- Unwillingness to change operations
- Existing resources, such as WV's business-to-business Web site, are not used by industry
- Potential liability
- "Been There Done That" attitude - too many solicitors
- Smaller players
- Competition among facilities
- Lack of interest in material exchanges by industry

Potential Solutions

- Increase involvement and promotion of results from existing forums by States
- Communicate information on ongoing projects, research or regulatory initiatives to JTR contacts participating on workgroups
- Develop new commodity pages on JTRnet for spent by-products
- Document and promote success stories to market opportunities and overcome negative perceptions
- Work with solid waste regulators during rule revision affecting beneficial reuse
- Support a full industrial by-products program, not just one project, in order to make significant strides in material reuse and recycling
- Establish a national forum across different industries (including generators and end users) and members of the regulatory community to foster dialogue, create case studies, and establish definitions for industrial by-products
- Offer an annual dialogue with industry, co-sponsored by EPA and ASTSWMO, to explore the characteristics and potential markets for industrial byproducts
- Establish partnerships and communication between industry and the regulatory community
- Promote information exchange among states regarding beneficial use determinations. (In Pennsylvania, recycled glass is used as pipe backfill for road building)
- Foster understanding regarding the scale of material generated (e.g., two millions tons in Ohio alone) and the motivations of regulators
- Conduct GIS research/cluster analyses
- Disseminate information to the general public and the regulatory community from a national source such as EPA to overcome regulators' fears about industrial by-product recycling (e.g., blending issues)
- Demonstrate uses for industrial byproducts to set the precedent for future beneficial use approvals (as has occurred with Brownfield development through MOUs)
- Leverage waste exchange networks to make the connection between generators and end users.
- Create a list of industrial by-products intermediaries (brokers) and foster a better understanding of issues facing them
- Evaluate and understand the distribution channels for industrial byproducts to facilitate access to the materials and to assist intermediaries
- Facilitate direct exchange of materials between generators and users; also, establish intermediaries to assist in market development

Opportunities for State Collaboration

- Work with the NCASI to include new industries (e.g., mining, agriculture) in its dialogue, develop additional regional- or material-specific information, and continue to publish information in publications such as *Biocycle*
- Work with the Great Lakes By-Products Commission, an organization that includes regulators, researchers, and municipalities, and focuses on land applications for industrial byproducts. Participants commented that the commission currently lacks consistency and has no research agenda. Visit the commission's Web site (http://www.glbma.org) for additional information
- Work with the Civil Engineering Research Foundation, an organization with representatives from the U.S. Department of Energy's Industries of the Future